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# **Green Power Programs in Washington: 2005 Report to the Legislature**

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## Executive Summary

Washington State RCW 19.29A.090 directs larger electric utilities to offer their customers a green power electricity product that customers may voluntarily purchase. The law requires utilities to report annually on the progress of these voluntary green power programs to the Department of Community, Trade and Economic Development and the Washington Utilities and Transportation Commission. This is the fourth reporting year.

The following are key findings:

- All 16 utilities affected by the law have submitted data for this report. All but one utility has an active program with customers participating.
- Between January and September 2005, customers purchased 130,391,323 kilowatt-hours (kWh), or 14.88 average megawatts (aMW), of green power through voluntary green power programs. The 2005 green power sales represent a 57% increase over 2004 sales.
- Wind-powered electricity represented 72% of the YTD green power sales, or 93,950,586 kilowatt-hours (10.7 aMW).
- 29,187 utility customers in Washington are participating in these voluntary utility programs. This is an 11% increase in customer participation since 2004 and a 139% increase since 2002.
- Several utilities recently initiated a bulk power price to allow their large customers to secure high-volume green power purchases. New participants include state universities, military bases and others. The success of the bulk-power programs is evidenced in 2005 by a 57% increase in the program sales with only an 11% increase in the number of participating customers.

Apart from these green power programs, in 2004 Washington's electric utilities included in their standard rate base power sales to all of their retail customers 36.6 aMW of wind power, 61.3 aMW of biomass fueled electricity and 14.7 aMW of electricity generated from landfill gas. Non-hydropower renewable electricity sales from rate-based electricity sales in 2004 combined with 2005 voluntary green program sales is about 131 aMW or 1.6% of total utility retail electricity sales in Washington.

## Introduction

Engrossed House Bill 2247, enacted in 2001<sup>1</sup>, requires electric utilities in Washington State to offer their retail customers an option to purchase qualified alternative energy resources -- often referred to as “green power.”<sup>2</sup> These electric utilities<sup>3</sup> must report annually details of their green power programs to the Washington Department of Community, Trade and Economic Development and the Washington Utilities and Transportation Commission between 2002 and 2012. Upon receiving the data each year, the agencies prepare and submit a report to the Legislature. This report provides an update on performance of green power programs using data for 2004 and January through September data for 2005. It summarizes each utility’s program, participation levels, program revenues and electricity sales.

To assist the utility reporting process, the agencies surveyed 17 consumer-owned and investor-owned electric utilities in the state. All 16 utilities required by law to respond did so and one small utility, Orcas Power and Light, voluntarily provided data.

## Background

The law gives utilities two options to provide qualified alternative energy resources: green power itself or green tags. Green tags are a type of currency used in the electricity industry to represent the environmental and social benefits of clean electricity production. They are sometimes called “tradable renewable energy certificates” or “renewable energy credits.” A green tag with the environmental attributes of a renewable resource is separated from the electricity produced and is sold as a distinct product. One product is unlabeled market power electricity; the other product (the green tag) represents the environmental attributes equivalent to the amount of electricity produced by renewable resources.

Buying green tags is like buying green power (e.g., wind or solar power) except that the purchaser doesn’t need to schedule or transmit the green power to a specific distribution utility or customer. Clark County PUD, Cowlitz County PUD, PacifiCorp, Puget Sound Energy, Seattle City Light, Snohomish County PUD and Tacoma Power sell green tags for their green power programs. In addition to utility-sponsored programs, 41 individuals in the state have bought a total of 417 green tags, (representing 417 megawatt hours) and five businesses have purchased 723 tags (representing 723 megawatt hours) directly from a Northwest green power marketer.<sup>4</sup>

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<sup>1</sup> L2001, ch. 214.

<sup>2</sup> The requirement is codified in RCW 19.29A.090. A “qualified alternative energy resource” is electricity produced from generation facilities fueled by wind, solar energy, geothermal energy, landfill gas, wave or tidal action, gas produced during the treatment of wastewater, qualified hydropower or biomass. RCW 19.29A.090(3).

<sup>3</sup> Small or rural utilities were exempted. A “small utility” is any consumer-owned utility with 25,000 or fewer electric meters in service, or that has an average of seven or fewer customers per mile of distribution line. RCW 19.29A.010(30).

<sup>4</sup> These figures are not included in the utility totals.

In 1999, the Bonneville Power Administration (BPA) began to sell a resource-specific electricity product, referred to as Environmental Preferred Power or EPP, to wholesale customers. EPP included a mix of renewable resources except large-scale hydropower. A small group of electric utilities in Washington began to purchase EPP prior to the establishment of green power programs and continue to purchase it. This product ensured that BPA's utility customers had ready access to a specific green power product.

## Overview of Survey Results

All utilities had green power programs in 2005. All but one program appears active. Table 1 summarizes state-level results for 2002, 2003, 2004 and an annualized estimate based on the first nine months of 2005. Participation, revenue and kilowatt-hour sales have increased each year of the program.

**Table 1 - Washington State Summary Data**

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005 (est.)*</b>	<b>% change since 2002</b>	<b>% change since previous year (04)</b>
Total kWh sales of green power	19,762,52	51,924,642	104,435,100	164,374,844	732%	57%
Total revenue from green power programs	\$632,282	\$1,254,067	\$1,911,861	\$2,468,393	290%	29%
Total number of participants	12,196	17,795	26,341	29,187	139%	11%

\* Annual 2005 estimate is based on extrapolating actual data for January through September.

Some utilities are noticing rapid growth in green power purchases by large commercial or institutional customers. In 2004, Fort Lewis purchased green tags through Tacoma Power's green power program equaling about 45% of the green power sold through Tacoma's program. In 2005, Fort Lewis' purchases, equaling 100% of the Fort's electricity use, represent 75% of Tacoma's green power sales. Beginning in the fall of 2005, some large customers of Puget Sound Energy, including Western Washington University and The Evergreen State College, are contracting to buy 100% green power through the utility's green power program. Several other large customers are making significant purchases as well; including state and federal government agencies,

businesses and private colleges. In 2006, large customers are expected to double the quantity of green power sold through PSE's program.

**Figure 1 - Washington State Total Green Power Program Sales and Number of Program Participants**

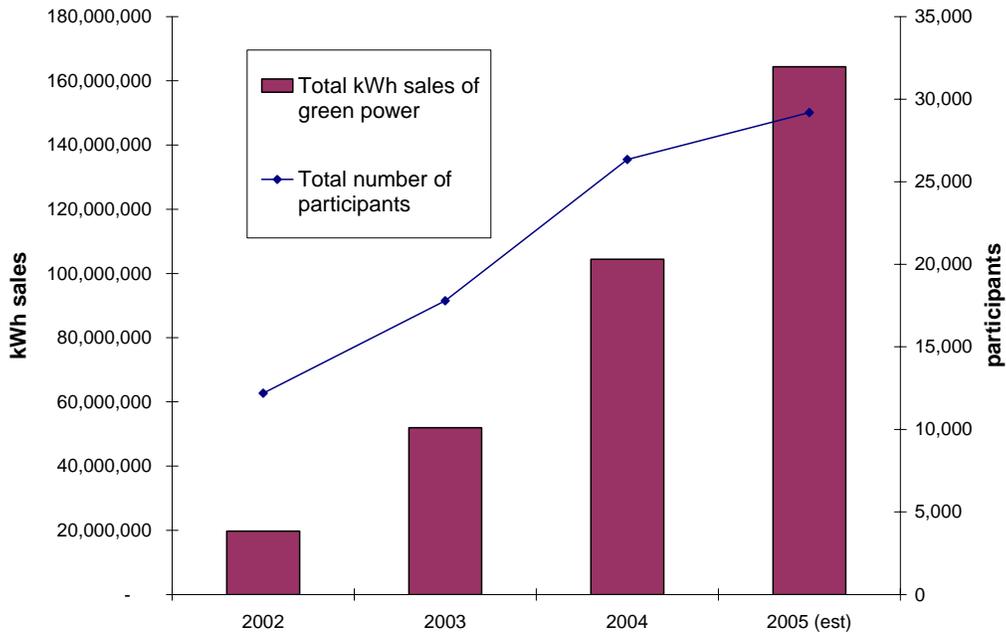


Table 2 describes each utility's program. The programs are offered to all customers. The products vary in price, ranging from Avista's low of \$0.003 per kWh and Chelan's high of \$0.47 per kWh. The green power products vary also. Most Washington utilities offer a "block" option to participants in their green power programs. A "block" of power refers to a specific number of kWh combined into a block; the participant pays a flat rate for each block of power. Customers have the option of buying any amount of blocks of green power each month. For example, Avista markets its program as a "Buck a Block" selling 300 kWh of wind power in one block for \$1.00. Chelan invests its ratepayers' contributions into local renewable energy projects such as solar power systems or small scale wind applications. Benton County PUD has a contribution-based program in which participants contribute to the higher cost of blending green power into the utility's general electricity mix which is sold to all customers. The additional green power isn't sold separately on a per-kWh basis to the participants.

**Table 2 - Description of Utility Green Power Programs**

<b>Utility</b>	<b>Program Name</b>	<b>Green Power Price-Description</b>
Avista	Buck-A-Block	\$1 per 300 kWh block
Benton County PUD	Green Power Program	unrestricted donation
Chelan County PUD	SNAP - Sustainable Natural Alternative Power	\$0.47 per kWh
Clallam County PUD	No name	\$.069 per kWh
Clark County PUD	Green Lights Program	\$1.50 per 100 kWh block
Cowlitz County PUD	Renewable Resource Energy Program	\$13.00 per 1,000 kWh block
Grant County PUD	Alternative Energy Resources	\$2.00 per 100 kWh block
Grays Harbor County PUD	Green Power Program	\$3.00 per 100 kWh block
Lewis County PUD # 1	Green Power Program	\$2.00 per 100 kWh block
Mason Co. PUD #3	Mason Evergreen Power	\$2.00 per 100 kWh block
Orcas Power and Light Cooperative	Go Green	\$3.50 per 100 kWh block
PacifiCorp	Blue Sky	Standard block option: \$1.95 per 100 kWh block Bulk block option: Price is based on sliding scale. \$.70 per 100 kWh block plus fixed charge of \$125 per month. Washington non-residential customers can choose the standard block or the bulk pricing option.
Peninsula Light Co.	Green by Choice	\$2.80 per 100 kWh block
Puget Sound Energy	Green Power Plan	Minimum: \$4.00 per 200 kWh block. Additional: \$2.00 per 100 kWh blocks. Large Volume Rate (Schedule 136 - effective 7/1): \$0.01/kWh for over 1,000,000 kWh annual purchase and a one year commitment. 100% Green Power billing option is available for both rates.
Seattle City Light	Seattle Green Power (new program)	\$0.015 per kWh
Snohomish Co. PUD	Planet Power	\$3.00 per 100 kWh block
Tacoma Power	EverGreen Options	\$.015 per kWh \$.006 per kWh for bulk power

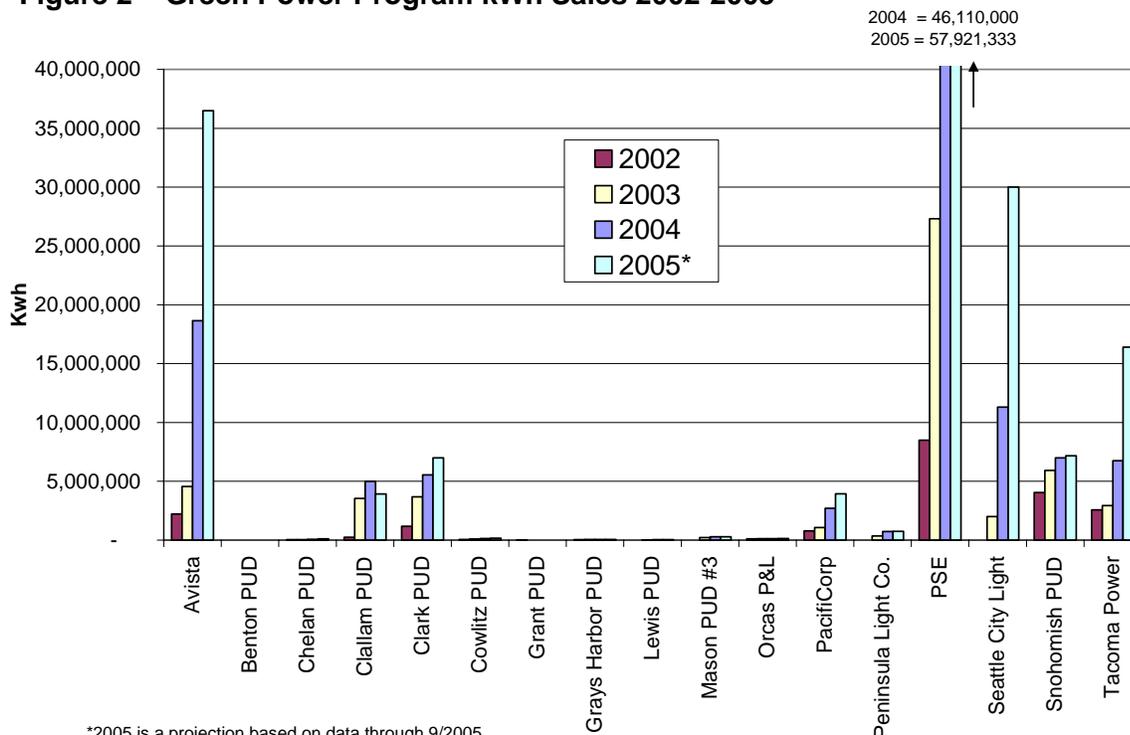
## Statewide Green Program Fuel Resources

Between January and September 2005, total green power program sales were 130,391,323 kWh (14.9 aMW). Wind power represented 72% of power offered in these programs. The total quantity of wind-generated power sold through the programs was 93,950,586 kWh. The programs also sold 28,977,116 kWh of electricity generated from landfill gas, 3,830,439 kWh of electricity generated from dairy biogas and biomass, 3,404,614 kWh of qualified hydro-electricity and 228,569 kWh of solar electricity.

## Green Power Sales Volume

Figure 2 compares green power sales for the first four years of the program. To compare data, the agencies have estimated<sup>5</sup> the total customer purchases of green power through these programs in 2005 to be 164,374,844 kWh, or 18.8 aMW. Table 3 (next page) is included to show results of the programs of small utilities. Grant County PUD is the only utility that reports no customers, no sales and no revenue from a specific green power program. Benton County PUD operates a contribution-based program and is unable to provide data on actual kWh sales. In mid-2004, Seattle City Light began transitioning from a contribution-based program to a green-tag, fixed-price program.

**Figure 2 – Green Power Program kWh Sales 2002-2005\***



\*2005 is a projection based on data through 9/2005

Note: Benton PUD has a contribution-based program and therefore is unable to provide specific sales data. Participants' green power contributions offset the utility's costs for purchasing non-hydro renewable resources.

<sup>5</sup> Actual data is available through September 2005. Annual sales for 2005 were estimated based upon sales continuing at current levels.

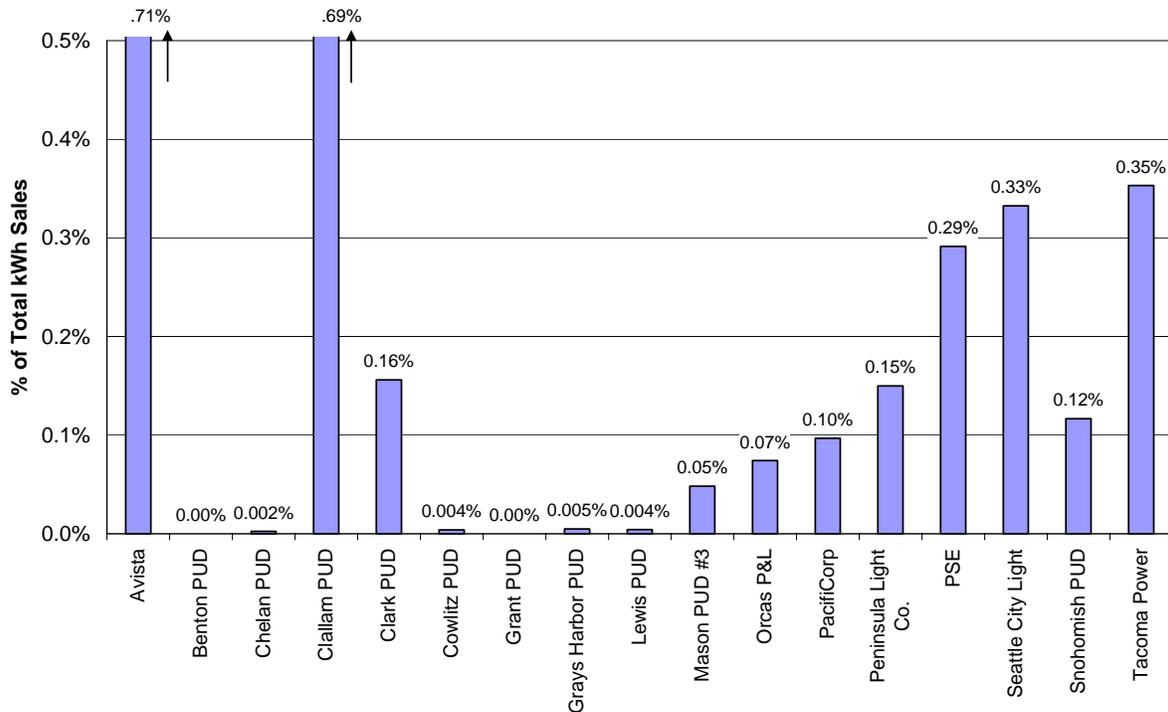
**Table 3 Green Power Program kWh Sales by Utility 2002-2005\***

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005*</b>
Avista	2,224,750	4,564,615	18,646,746	36,501,696
Benton PUD	-	-	-	-
Chelan PUD	28,507	34,329	64,840	102,443
Clallam PUD	244,179	3,534,336	4,991,521	3,922,631
Clark PUD	1,178,666	3,689,100	5,545,000	6,990,933
Cowlitz PUD	55,690	97,078	148,171	162,111
Grant PUD	9,500	-	-	-
Grays Harbor PUD	33,500	48,500	53,400	47,867
Lewis PUD	-	22,400	35,200	33,467
Mason PUD #3	-	217,900	282,600	289,200
Orcas P&L	99,400	125,600	117,361	142,463
PacifiCorp	783,000	1,076,800	2,695,300	3,927,333
Peninsula Light Co.	4,772	361,428	725,778	755,088
PSE	8,496,000	27,313,000	46,110,000	57,921,333
Seattle City Light	-	2,000,000	11,294,000	30,000,000
Snohomish PUD	4,037,231	5,914,065	6,985,955	7,179,200
Tacoma Power	2,567,333	2,925,491	6,739,228	16,399,080
<b>TOTAL</b>	<b>19,762,528</b>	<b>51,924,642</b>	<b>104,435,100</b>	<b>164,374,844</b>

\*2005 is a projection based on data through September

Figure 3 (next page) provides the green power sales as a percentage of total utility retail sales to indicate relative activity at each utility and the resulting sales to customers for different types of programs. Avista, Clallam PUD, and Tacoma Power have the highest green power sales penetration rates. Clallam PUD's program is unique within the state; it offers one inclusive green power product at one price for its customers. Those that choose to participate buy 100% of their electricity from Clallam's green power program.

**Figure 3 - Green Power Sales as a Percent of Total Utility Sales,\* 2005**



\*Based on 2005 green power sales as a % of 2004 total utility sales  
 Note: Benton PUD has a contribution-based program and therefore is unable to provide specific sales data.

Several consumer-owned utilities purchase renewable power or renewable power tags on behalf of all of their customers and then offers some of this product at a separate, additional price to their green program participants

In addition to these voluntary programs, 27 electric Washington utilities acquired non-hydropower renewable resources in 2004 to serve electricity to all their customers, up from 23 in 2003. The state's fuel mix disclosure data indicates that these utilities sold 36.6 aMW of wind power and 61.3 aMW of biomass fueled electricity, and 14.3 aMW of electricity generated by landfill gas in 2004 to all of their Washington retail customers.<sup>6</sup>

<sup>6</sup> Fuel Mix Disclosure Process, facilitated by the Department of Community, Trade and Economic Development, spring 2004, <http://www.cted.wa.gov/DesktopDefault.aspx?TabId=73>.

## Customer Participation

Figure 4 indicates the level of customer participation by utility as a percentage of total customers. Orcas Power and Light Company has the highest participation rate at 4.85%, followed by Chelan County PUD at 1.7%, Puget Sound Energy at 1.46%, Peninsula Light at 1.32% and Seattle City Light at 1.24%. Statewide, there are 29,187 customers (1.09% of eligible customers) voluntarily making the decision to purchase these differentiated green power products in the fourth year of the programs.

**Figure 4 - Customer Participation Rate in Green Power Programs 2002-2005**

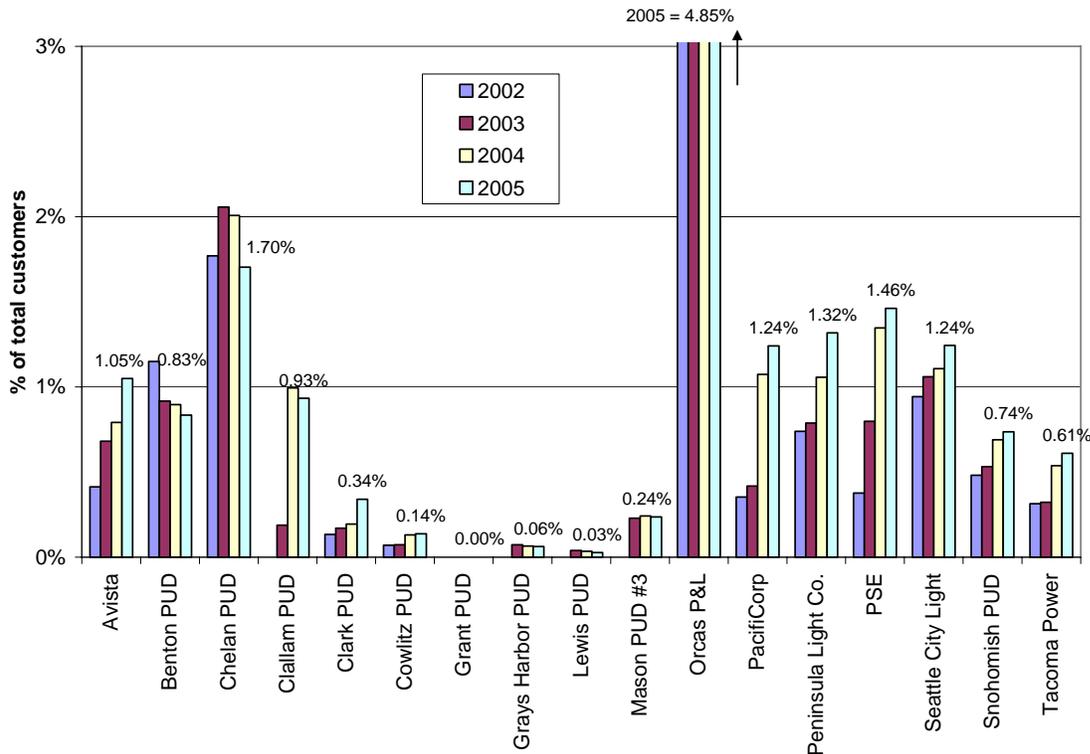
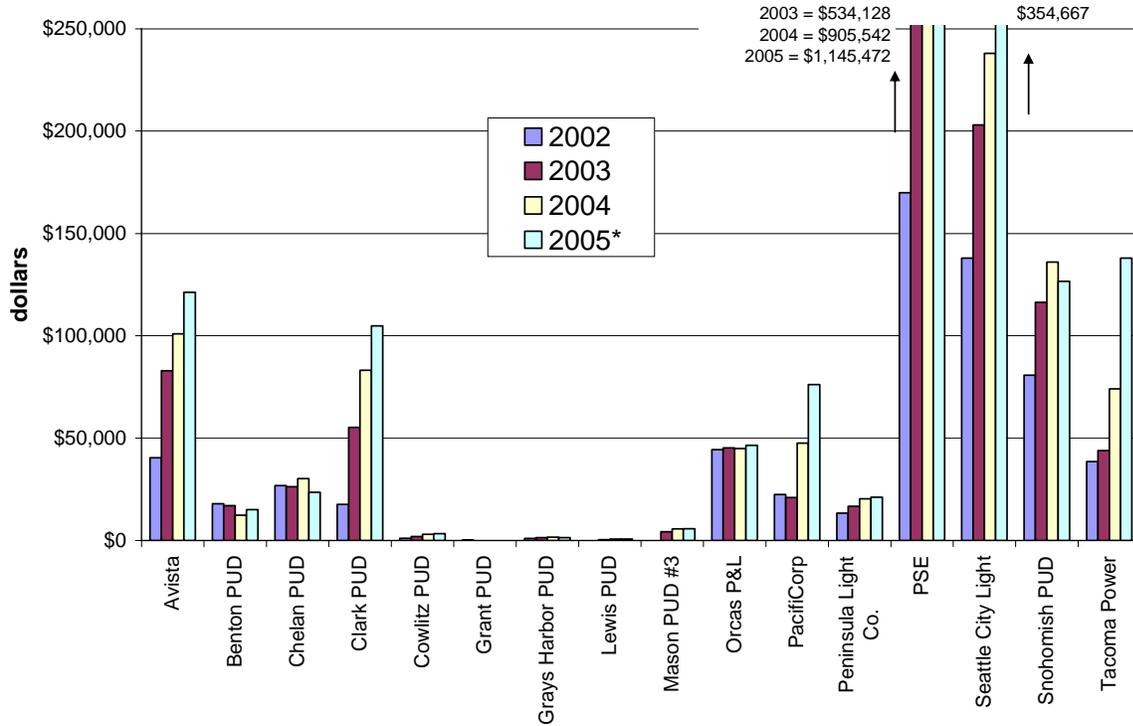


Figure 5 (next page) reports annual revenues from green power sales by utility for 2002 through 2005, indicating that 12 of the programs have grown since last year. Puget Sound Energy, the largest electric utility in the state, has both the highest kWh sales (see Table 3) as well as the highest green power program revenues. Total revenue from Washington ratepayers' purchases and contributions of green power from these optional programs was \$1,911,861 in 2004 and is estimated to increase 29% to \$2,468,393 in 2005. Actual reported revenue for January through September (or through August for a few utilities) of 2005 was \$1,827,887.

This revenue does not reflect the total cost of the electricity. It typically reflects the above-market cost of the renewable resource power and the costs of program administration and marketing. The exception to this is Clallam County PUD, which

charges its green power customers one inclusive rate for distribution, transmission, and power. Because Clallam County PUD's program revenues represent the total cost of the electricity, whereas most program revenues represent just the incremental cost of the renewable power, Clallam PUD's data are not included in this chart.

**Figure 5 - Revenues from Utility Green Power Programs for 2002 – 2005\***



\*2005 is a projection based on data through 9/2005

## Conclusions

The voluntary programs resulted in 130,391,323 kilowatt-hours or 14.9 aMW of green power sales in Washington for the first nine months of 2005. Utilities sold 93,950,586 kWh of wind power, 3,830,439 kWh of electricity generated by biomass, 28,977,116 kWh of electricity generated from landfill gas, 228,569 kWh of solar-electricity, and 3,404,614 kWh of endorsed hydro-electricity through their programs. If this continues for the remainder of the year, estimated sales for 2005 will equal 18.8 aMW and will result in a 57% increase in sales over 2004 and a 732% increase since 2002.

See [http://www.cted.wa.gov/CTED/documents/ID\\_1407\\_Publications.pdf](http://www.cted.wa.gov/CTED/documents/ID_1407_Publications.pdf), the 2002 Green Power Report Appendix, for more details on the original individual utility programs.